IN THE SPECIFICATION:

At Page 1, line 3, after the Title "Direct Antifreeze Cooled Fuel Cell", please add the following caption and new paragraph:

-- Cross Reference to Related Applications

This is a divisional application of pending U.S. Patent Application Serial No. 09/359,475, that was filed on July 22, 1999, that has the same title, and that is to issue on November 13, 2001 as U.S. Patent No. 6,316,135. --

Please replace the paragraph beginning at page 12, line 15, with the following rewritten paragraph:

-- The fuel cell 10 also includes a wetproofed cathode support means that is secured in direct fluid communication with the cathode catalyst 56 between a cathode water transport plate 64 and the cathode catalyst 56 for passing the process oxidant stream adjacent the cathode catalyst 56. The wetproofed cathode support means may include one or more porous layers, such as a porous cathode substrate 62, a porous cathode diffusion layer 68, or both the porous cathode substrate 62 and porous cathode diffusion layer 68 secured adjacent each other between the cathode water transport plate 64 and cathode catalyst 56, wherein at least one of the porous layers is wetproofed. The porous cathode substrate 62 and porous anode substrate 58 may be porous carbon-carbon fibrous composites having a porosity of about 65% to about 75%, and may be wetproofed by a hydrophobic substance such as "TEFLON" brand polytetrafluoroethylene (as described in more detail below) to a concentration of approximately 0.18 grams per cubic centimeter. The porous cathode gas diffusion layer 68 and porous anode diffusion layer 66 may be about a 50% carbon material and about 50% hydrophobic material such as "TEFLON" brand polytetrafluoroethylene (as described in more detail below). --

Please replace the paragraph beginning at page 16, line 6, with the following rewritten paragraph:

-- The porous anode and cathode substrate layers were porous carbon - carbon fibrous composite having a thickness of approximately 0.006 - 0.007 inches, and a porosity of about 65 - 75 percent, and were acquired as grade TGP-H-060 from the Toray Company of New York, NY. The anode and cathode substrate layers were uniformly wetproofed with "TEFLON" brand polytetrafluoroethylene, grade "FEP - 121" sold by the E.I. DuPont Company, of Willmington, DE, to a concentration of approximately 0.18 grams per cubic centimeter by wetproofing procedures well-known in the art. --

A3

Please replace the paragraph beginning at page 16, line 16, with the following rewritten paragraph:

-- The porous anode and cathode gas diffusion layers were applied to both the anode and cathode substrates by procedures well-known in the art and described in U.S. Patent 4,233,181, which patent is owned by the assignee of all rights in the present invention, and which patent is hereby incorporated herein by reference. The anode and cathode diffusion layers were approximately 0.003 - 0.004 inches thick, and had a mass of approximately 5.4 milligrams per square centimeter. The anode and cathode gas diffusion layers consisted of about 50 percent Vulcan XC-72 obtained from the Cabot Corporation of Billerica, MA and about 50 percent "TEFLON" brand polytetrafluoroethylene, grade "TFE - 30", obtained from the aforesaid E. I. DuPont Company. The anode and cathode gas diffusion layers were heated to approximately 660$^0$F for about 5 minutes to make them wetproofed or hydrophobic. --

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Please replace the paragraph beginning at page 18, line 18, with the following rewritten paragraph:

-- The coolant stream used for the test ranged from pure water to 65% glycerol and 35% water. The glycerol used was a certified ACS grade 99.9% glycerol. It is pointed out that use herein of the word "glycerol" as a form of antifreeze solution cooling fluid is meant to include "glycerine", where "glycerine" is understood herein and in general acceptance to include glycerol and water solutions or mixtures. Concentration of the glycerol in the antifreeze solution (glycerol and water. e.g., "glycerine") was measured by determining the specific gravity of the glycerol and water solution at 20°C. The antifreeze solution coolant stream was circulated through coolant flow channels in both an anode and a cathode water transport plate that defined anode and cathode flow field channels at a total flow rate of approximately 15 pounds per hour. The inlet and exit temperatures of the coolant stream entering and leaving the cell were 65°C plus or minus 5°C. --

A5

Please replace the paragraph beginning at page 33, line 1 (the "Abstract of the Disclosure"), with the following rewritten paragraph:

A6

-- A direct antifreeze cooled fuel cell is disclosed for producing electrical energy from reducing and process oxidant fluid streams that includes an electrolyte secured between an anode catalyst and a cathode catalyst; a porous anode substrate secured in direct fluid communication with and supporting the anode catalyst; a porous wetproofed cathode substrate secured in direct fluid communication with and supporting the cathode catalyst; a porous water transport or cooler plate secured in direct fluid communication with the porous cathode substrate; and, a direct antifreeze solution passing through the porous water transport plate. A preferred direct antifreeze solution passing through the porous water transport plate remains essentially within the water transport plate and does not poison the catalysts. --